# US DOE's Savannah River Site (SRS)

## Nuclear Weapons & Nuclear Waste




Tom Clements, Director, Savannah River Site Watch Columbia, SC, Nov. 9, 2026
www.srswatch.org -- https://www.facebook.com/SavannahRiverSiteWatch

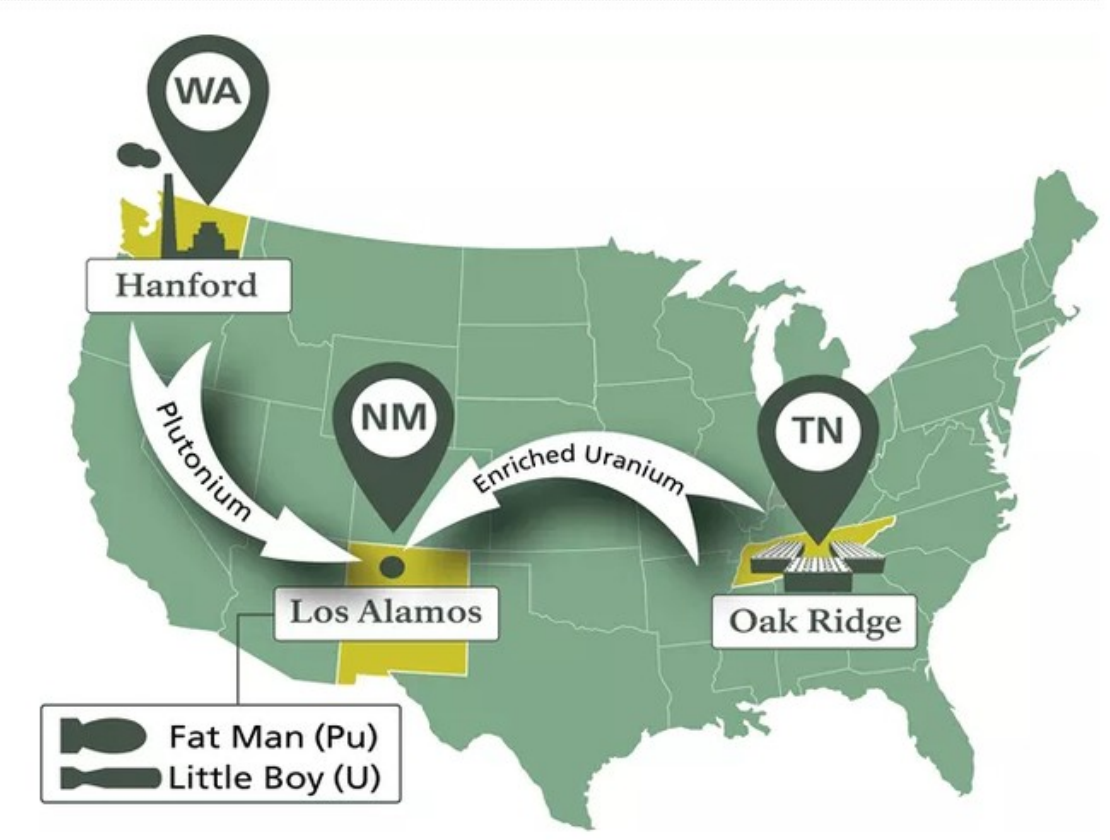
SRS WATCH

Savannah River Site Watch

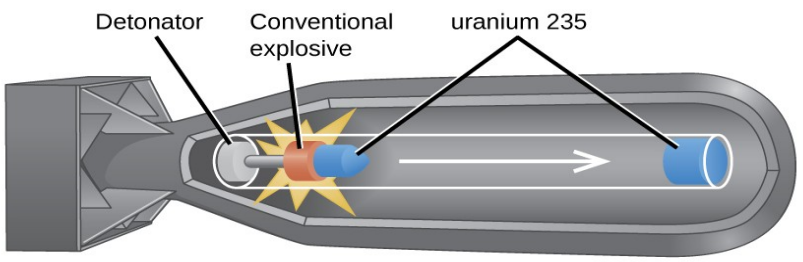
Manhattan Engineer District (MED), U.S. Army Corps of Engineers, 1942-1945
aka the Manhattan Project



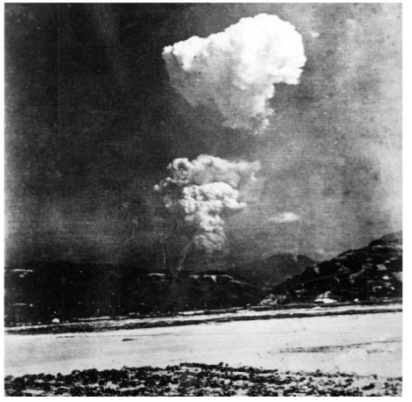
# Manhattan Project National Historic Site - National Park Service, Manhattan Project Sites during World War II

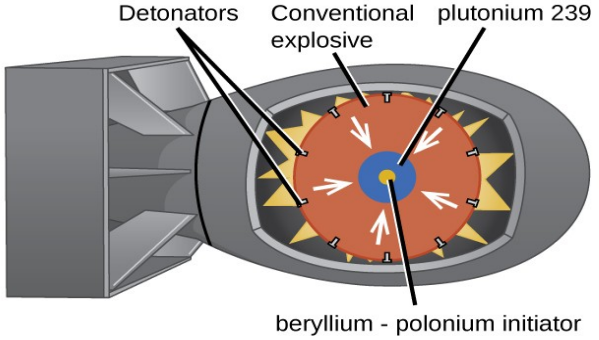


# Results of the Manhattan Project: Two Nuclear Weapons Designs, with “Highly Enriched Uranium” (Hiroshima) and Plutonium (Nagasaki)




(a)

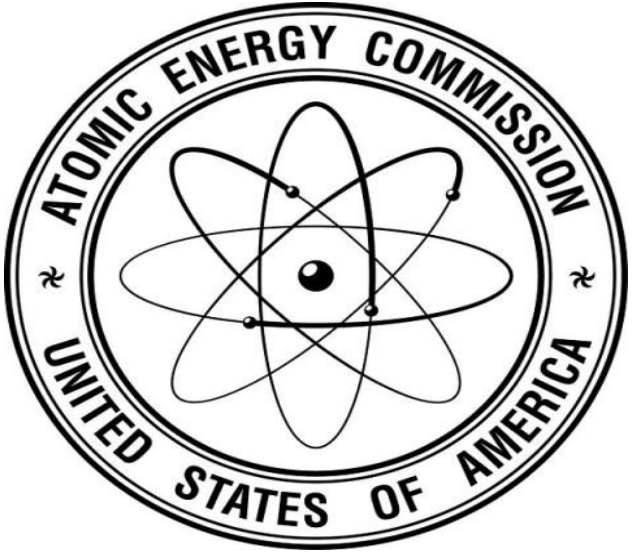





(b)

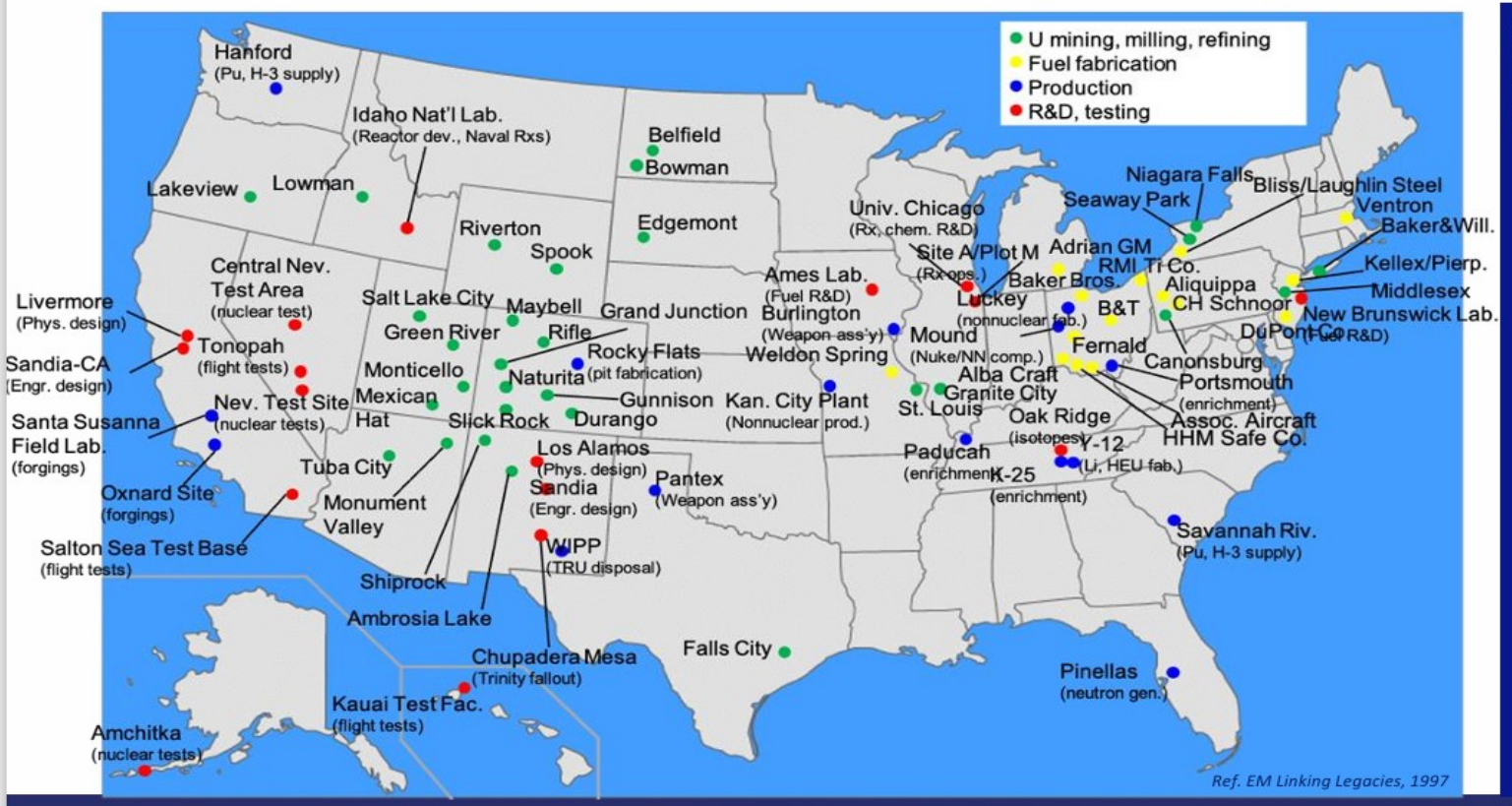


The **Atomic Energy Commission (AEC)** was established in 1946 to address civilian and military nuclear matters – under civilian control.
In 1974, the AEC was split into the Energy Research and Development Administration (ERDA) and the U.S. Nuclear Regulatory Commission. (NRC). In 1977, ERDA was reorganized into the **U.S. Department of Energy (DOE)**. In 2000, DOE's **National Nuclear Security Administration (NNSA)** was created, semi-autonomous agency in DOE in charge of nuclear weapons.



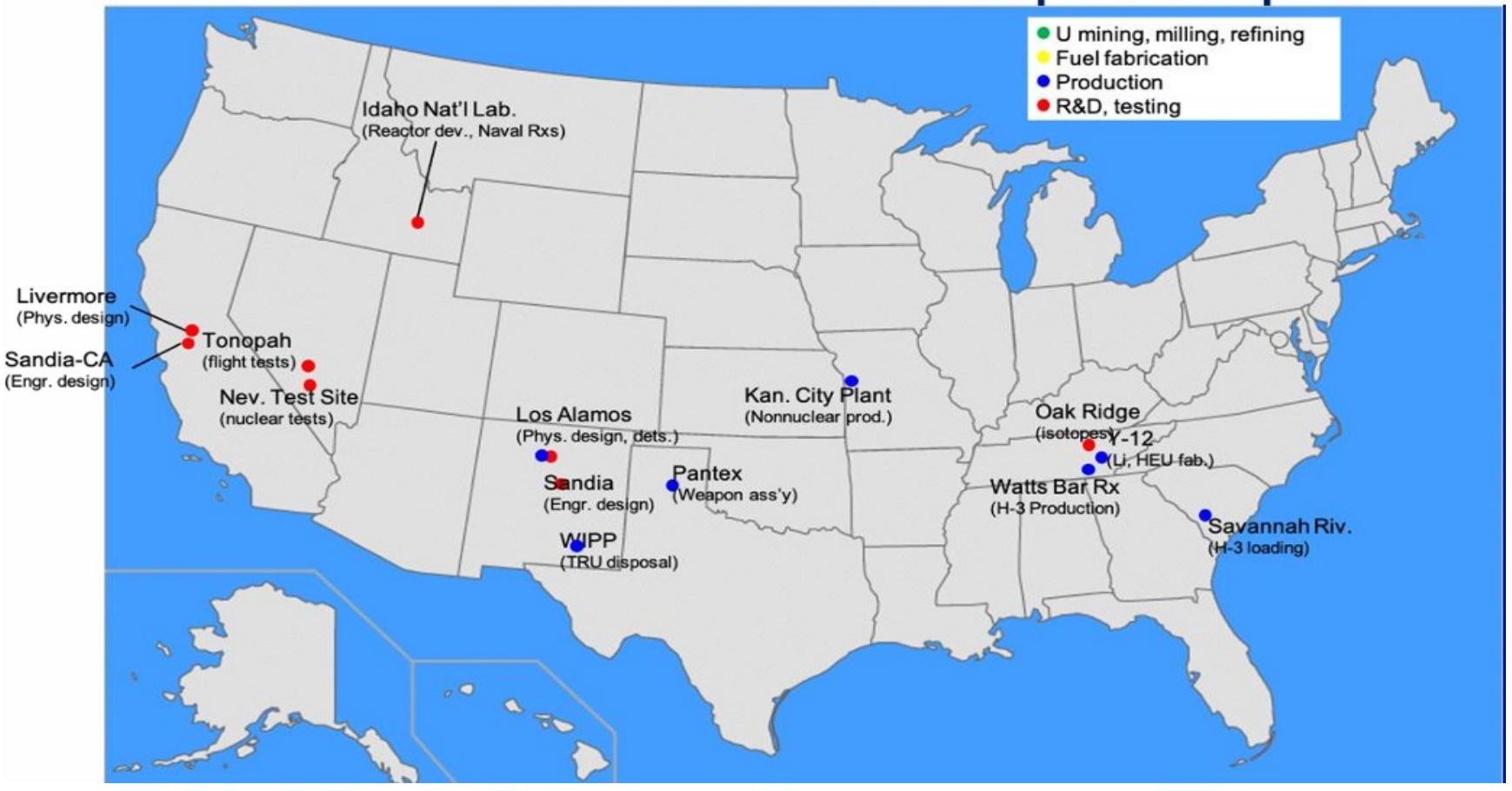



# The Historic Nuclear Weapons Complex



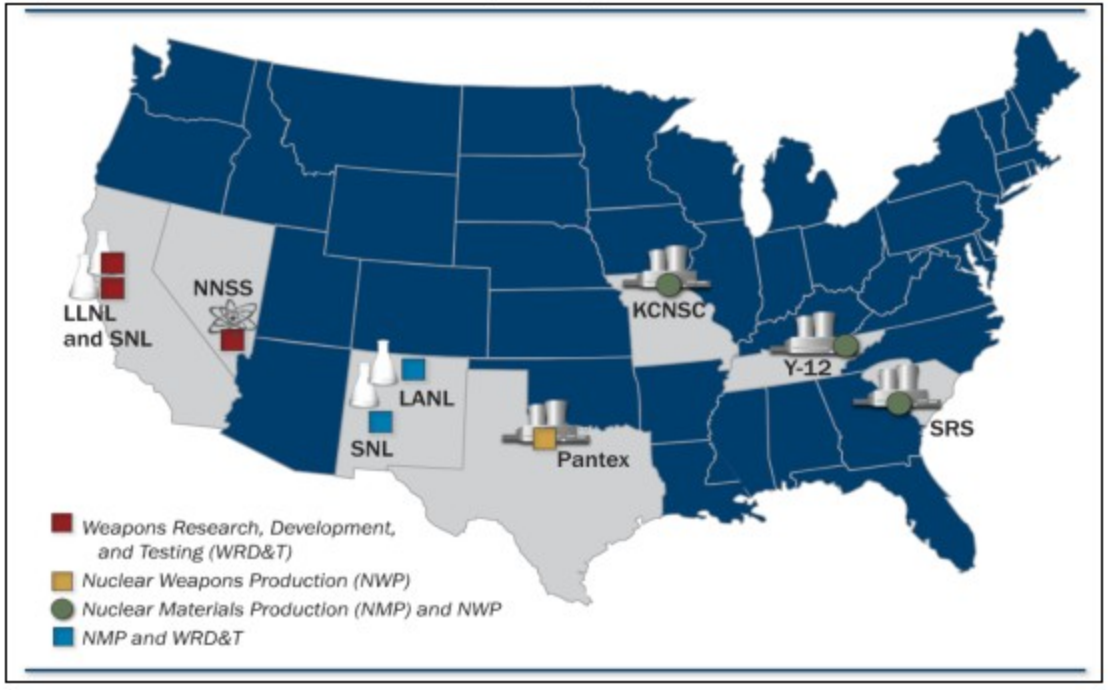

**Most of the continental United States was a part of the nuclear weapons complex.**

# The Current Nuclear Weapons Complex



# NNSA's Nuclear Security Business Enterprise

**Figure 2. NNSA Nuclear Security Enterprise**




**Source:** U.S. Department of Defense, "NNSA Nuclear Security Enterprise," *Nuclear Matters Handbook*, 2020, chapter5.html


NAVAL NUCLEAR LABORATORY
Naval Reactor Facility
NAVAL NUCLEAR LABORATORY
Bettis Atomic Power Lab
NAVAL NUCLEAR LABORATORY
Knolls Atomic Power Lab
Lawrence Livermore National Laboratory
Sandia National Laboratories
NEVADA NATIONAL NNSS SECURITY SITE
Los Alamos NATIONAL LABORATORY
NNSA
National Nuclear Security Administration
Sandia National Laboratories
PANTEX
KANSAS CITY NSC National Security Campus
Y-12
Savannah River Site
Idaho Falls, ID
Livermore, CA
Las Vegas, NV
Los Alamos, NM
Albuquerque, NM
Amarillo, TX
Kansas City, MO
Schenectady, NY
West Milton, NY
NAVAL NUCLEAR LABORATORY
Kesselring Site
Pittsburgh, PA
Germantown, MD
Washington, DC
Oak Ridge, TN
Aiken, SC

# Today: NSE Complex

Los Alamos National Laboratory



Lawrence Livermore National Laboratory



Sandia National Laboratories



Kansas City National Security Campus



Federal government (DOE/NNSA), with input from labs and plants, provides scope & budgets to these organizations every year, creating an environment of cooperation and competition

Y-12 National Security Complex



Savannah River Site



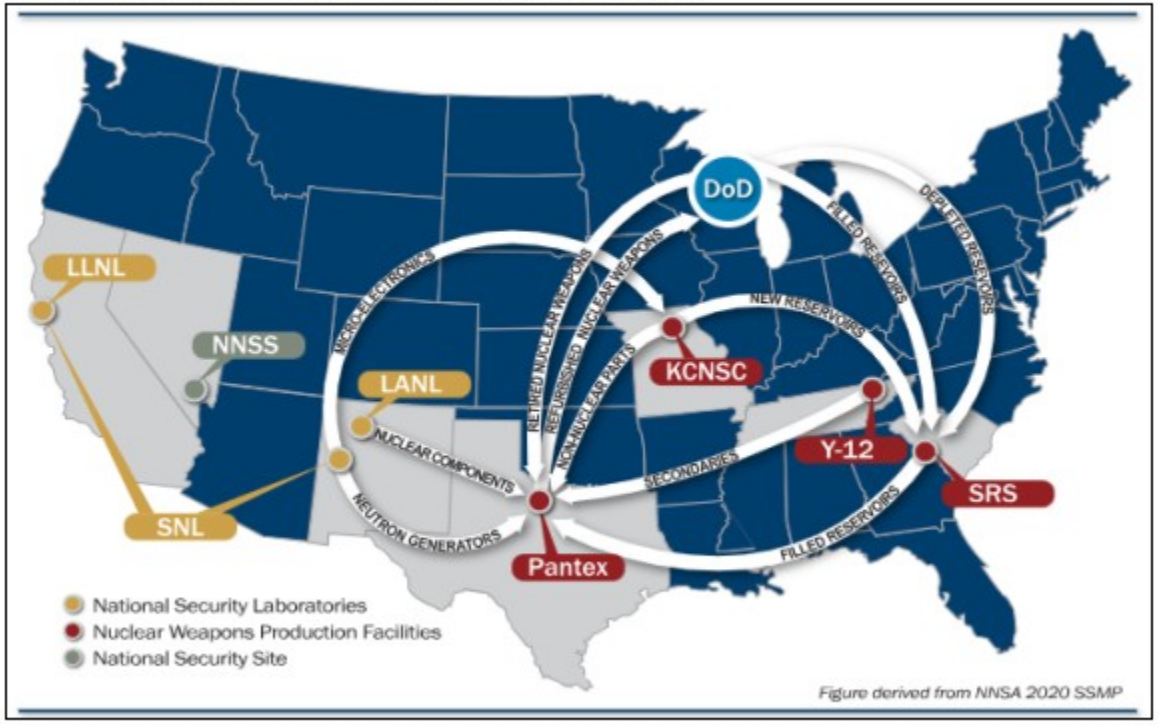
Pantex Plant



Nevada National Security Site



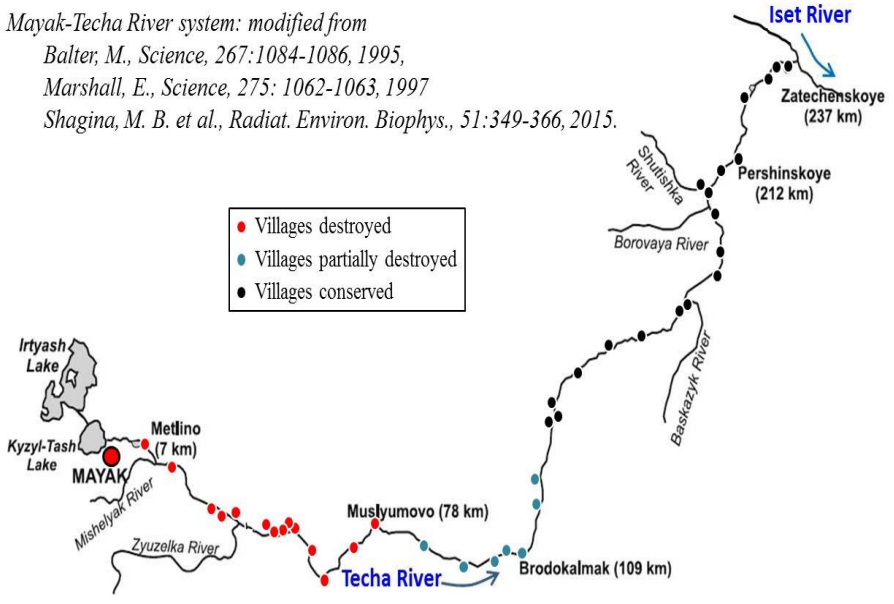
**Figure 3. NNSA Nuclear Weapon Product Flow**




**Source:** U.S. Department of Defense, "NNSA Nuclear Security Enterprise," *Nuclear Matters Handbook*, 2020,

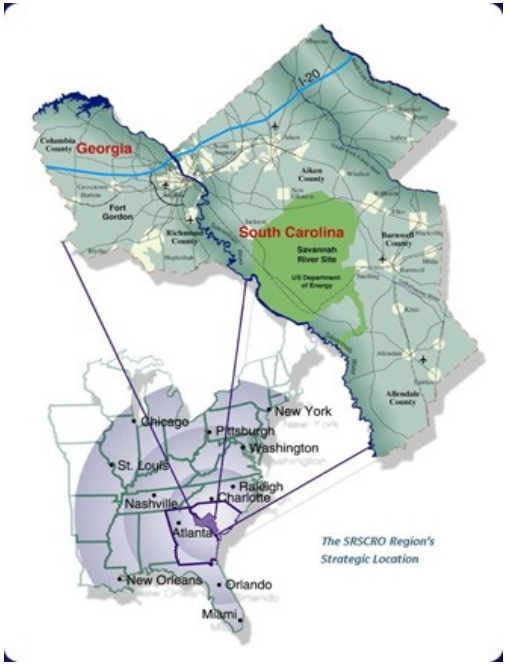
The Soviet complex at Mayak (Chelyabinsk Oblast) begin operating in 1949 and produced the first plutonium for the Soviet weapons program. Operations dumped tens of millions of cubic meters of high-level nuclear waste into the Techa River. Zheleznogorsk (Krasnoyarsk-26) also produced Pu. US & Soviet nuclear weapons facilities mirrored each other.



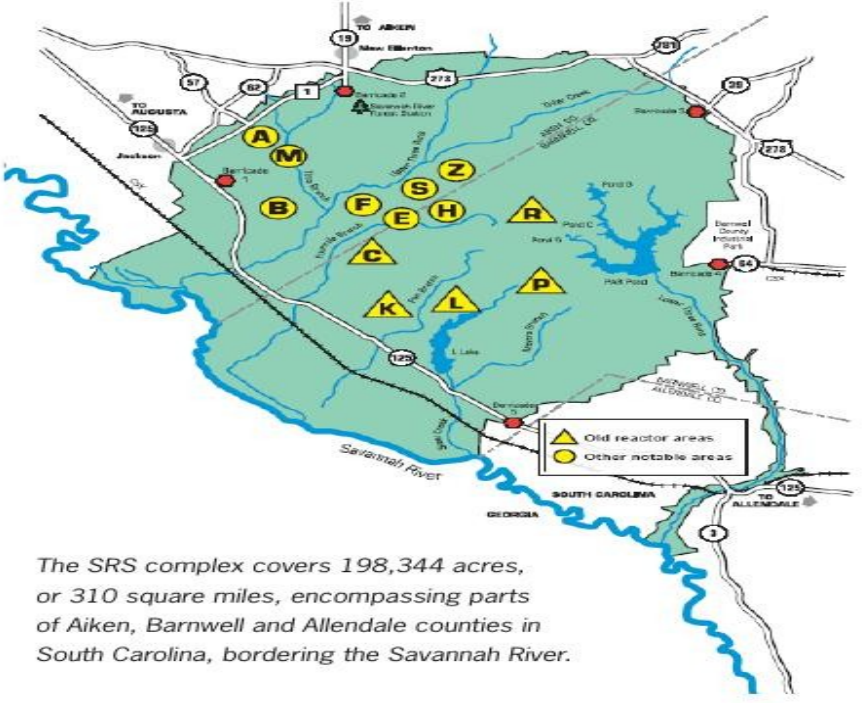


President Truman, keeping in mind the first Soviet nuclear weapons test on August 29,1949, at the Semipalatinsk Test Site in the Kazakh Soviet Socialist Republic (now Kazakhstan), ordered the development of an AEC nuclear-weapons-production complex, including the the 310-square-mile Savannah River Plant (SRP) in1950. SRP was to be the location of tritium and plutonium production for US nuclear weapons. A nuclear arms race was underway.



The Savannah River Plant (SRP) was originally managed by DuPont. Name changed to Savannah River Site (SRS) in 1989 when Westinghouse took over. **Currently employs about 13,000 people and has a yearly budget of about $5 billion: including $1.7 billion for environmental clean-up + $3 billion for "weapons activities" (up from $1.8 billion in FY 26)**




*The SRS complex covers 198,344 acres, or 310 square miles, encompassing parts of Aiken, Barnwell and Allendale counties in South Carolina, bordering the Savannah River.*

By 1955, SRP had 5 nuclear reactors producing weapon-grade plutonium and tritium – R, P, K, L & C. (No electricity was produced.) Weapon-grade plutonium-239 was removed in “reprocessing” plants from “targets” irradiated in the reactors. SRP produced 36 metric tons of Pu and Hanford, with 9 reactors, produced 67 MT. 3 kg Pu or less = one weapon core (pit).





# K-Reactor (where plutonium is now stored) and H-Canyon reprocessing plant






Processing plutonium produced a vast amount of liquid radioactive high-level nuclear waste, dumped into 51 massive tanks, to be dealt with later. About 35 million gallons of HLW remain, in 48 tanks. About 4500 large stainless steel containers have been filled with “vitrified” waste from the tanks. The State of SC has called this deadly waste the biggest environmental threat in the state.



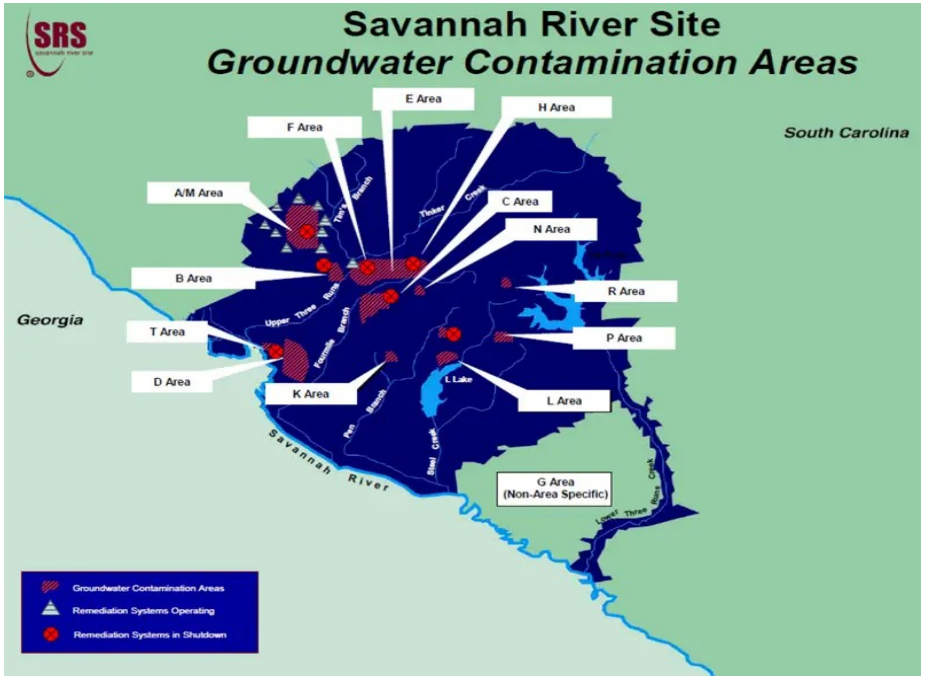


Under the Atomic Energy Act and Nuclear Waste Policy Act, high-level nuclear waste (HLW) is defined as spent nuclear fuel (irradiated fuel removed from a reactor) and byproducts of reprocessing (of spent fuel to remove plutonium), which includes high-level nuclear waste at the Savannah River Site. By the same laws, HLW must be disposed of in a “geologic repository.” But no such repository exists. Unknown: how long will the HLW canisters remain at SRS?





A heavy environmental burden at SRS due to haphazard waste disposal:
chemical waste dumped into disposal “basins” &
low-level nuclear waste (LLW) dumped into ground-level trenches in E-Area. Nuclear waste from nuclear weapons accidents, such as at Palomares, Spain (1963) and Thule Air Base, Greenland (1966) was brought to SRP. Due to the large number of badly contaminated areas, SRP was placed on the EPA’s “Superfund” list (National Priorities List) in 1989.

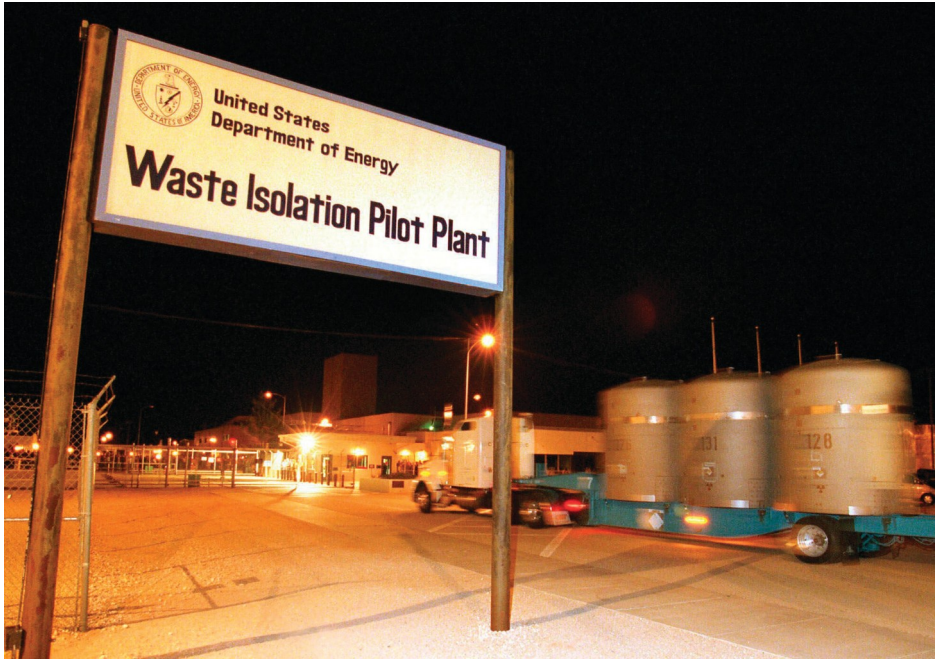





About 60  MT of plutonium is surplus to defense “needs” and DOE attempted to build a facility to make plutonium nuclear fuel (MOX) out of 34 MT of plutonium – to “get rid” of it - but after wasting $5-8 billion on construction, the MOX plant was canceled in 2017 when 1) there were no interested customers – electricity utilities with nuclear reactors, 2) the cost estimate skyrocketed to $14 billion and 3) it was cheaper to dispose of the plutonium as nuclear waste.



A program that started after the MOX project was canceled, to “down blend” the plutonium with a secret material in the old K-Reactor at SRS and take it to the WIPP disposal facility in New Mexico, was canceled in May 2025. Now, DOE wants to give away 19.7 MT of weapon-grade plutonium to private industry to use as nuclear fuel for speculative nuclear reactors. This idea holds nuclear proliferation risks.






October 2024: SRS moves from being a site with a main focus on “clean-up” (a project with an end date) to a site with a focus on nuclear weapons (no end date & the federal funding supposedly continues indefinitely…). [Site budget figures: https://www.energy.gov/documents/doe-fy-2027-state-tables]

**EM to NNSA landlord transition complete at Savannah River Site**

AIKEN, S.C. – (October 1, 2024) Nearly six years after it was first announced, the U.S. Department of Energy (DOE) has transitioned landlord responsibilities at the Savannah River Site (SRS) from the Office of Environmental Management (EM) to the National Nuclear Security Administration (NNSA), aligning with the start of federal fiscal year 2025.

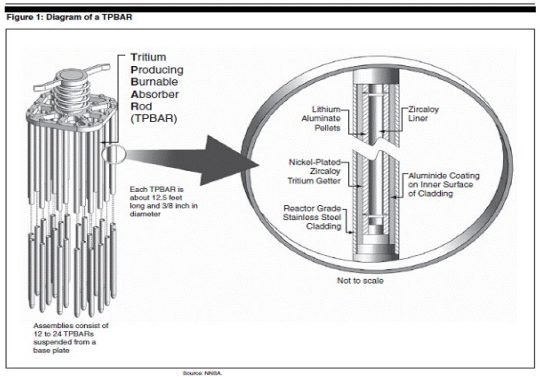
Landlord responsibilities include the primary authority, accountability and stewardship responsibilities of SRS. All other non-landlord federal entities at SRS are referred to as ‘tenants,’ which describes EM's new role at the Site.

“With the growth in NNSA missions coming to SRS, a shift in landlord responsibilities made sense,” said Mike Budney, Manager, DOE-Savannah River Operations Office. “While we are no longer responsible for the day-to-day administration of SRS; we are not going anywhere; we’ll be here until the job is done on our environmental cleanup mission.”

SRS joins other sites like the Los Alamos National Laboratory, the Nevada National Security Sites, and the Pantex Plant under the direct responsibility of NNSA.

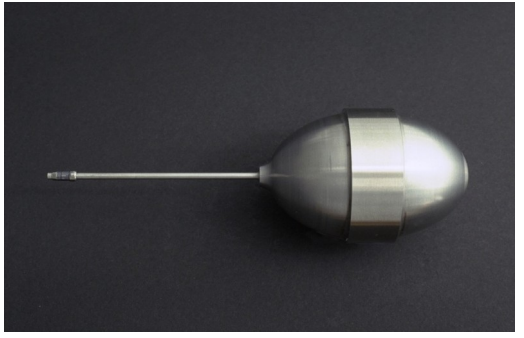
# Two major nuclear weapons “missions” at SRS: tritium processing & construction of a facility for plutonium pit production (around 2035)




Watts Bar Nuclear Generating Station





**Plutonium Pits:** In 2018, with the MOX project dead, DOE announced that it was pursuing a plutonium "pit" factory at SRS. NNSA proposes to make a minimum of 50 pits/year at SRS and 30 ppy at Los Alamos. These weapon "cores" would be for new nuclear warheads. Funding for FY 27: ~$2 billion. A new cost estimate of the SRS pit plant is about $30 billion - $23 billion for renovating the partially finished MOX building, into which $5-8 billion has been sunk. **This would make the SRS pit plant the most expensive building in US history!**

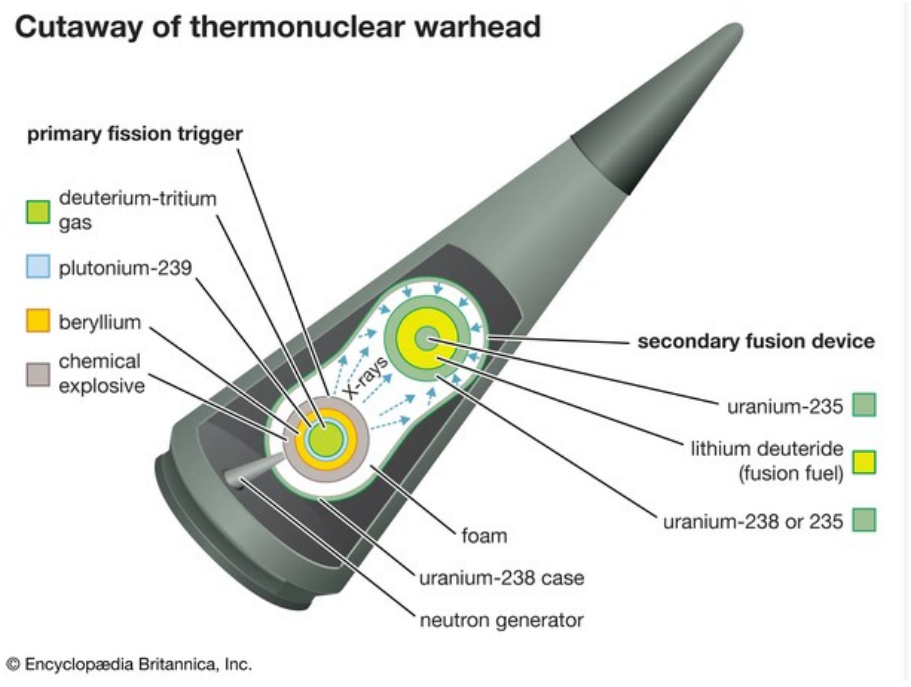


MPB Subproject (21-D-511-02)

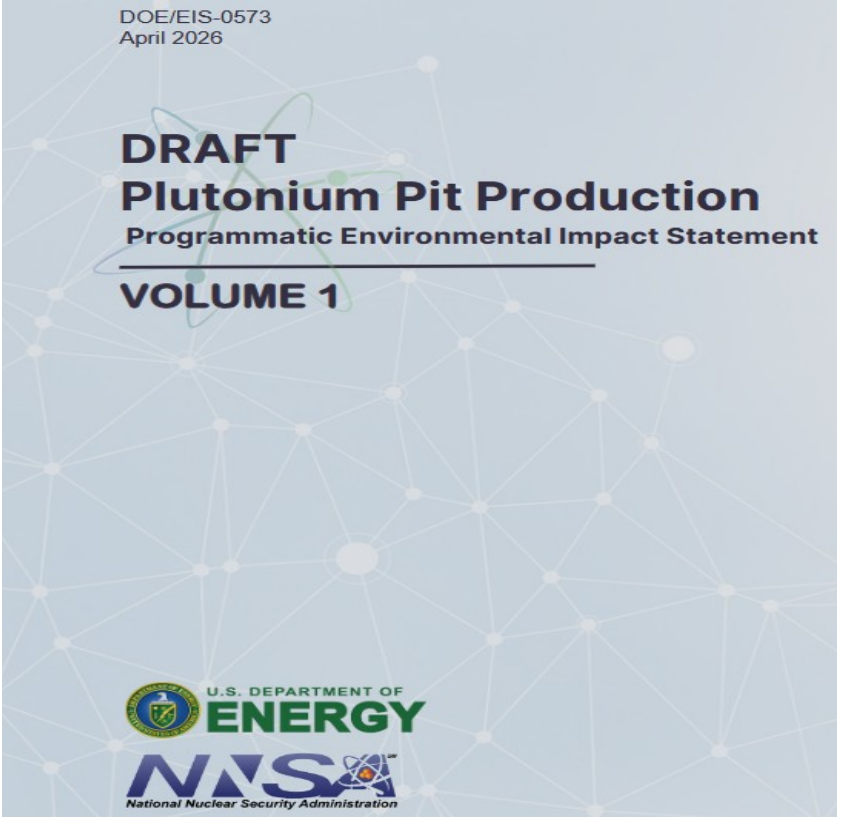
(SK)

| Fiscal Year | TEC, Design | TEC, Construction | TEC, Other | TEC, Total | OPC | OPC, Total | TPC |
|---|---|---|---|---|---|---|---|
| FY 2022 | TBD | TBD | TBD | TBD | TBD | TBD | TBD |
| FY 2023 | 1,318,896 | 5,704,766 | 441,104 | 7,464,766 | 1,935,234 | 1,935,234 | 9,400,000 |
| FY 2024 | 1,454,388 | 5,297,274 | 441,104 | 7,192,766 | 1,866,234 | 1,866,234 | 9,059,000 |
| FY 2025 | 2,154,388 | TBD | TBD | TBD | TBD | TBD | TBD |
| FY 2026 | 2,650,596 | 14,508,204 | N/A | 17,158,800 | 5,548,000 | 5,548,000 | 22,706,800[3] |
| FY 2027 | 2,643,709 | 15,265,091 | N/A | 17,908,800 | 5,598,000 | 5,598,000 | $23,506,800[3] |

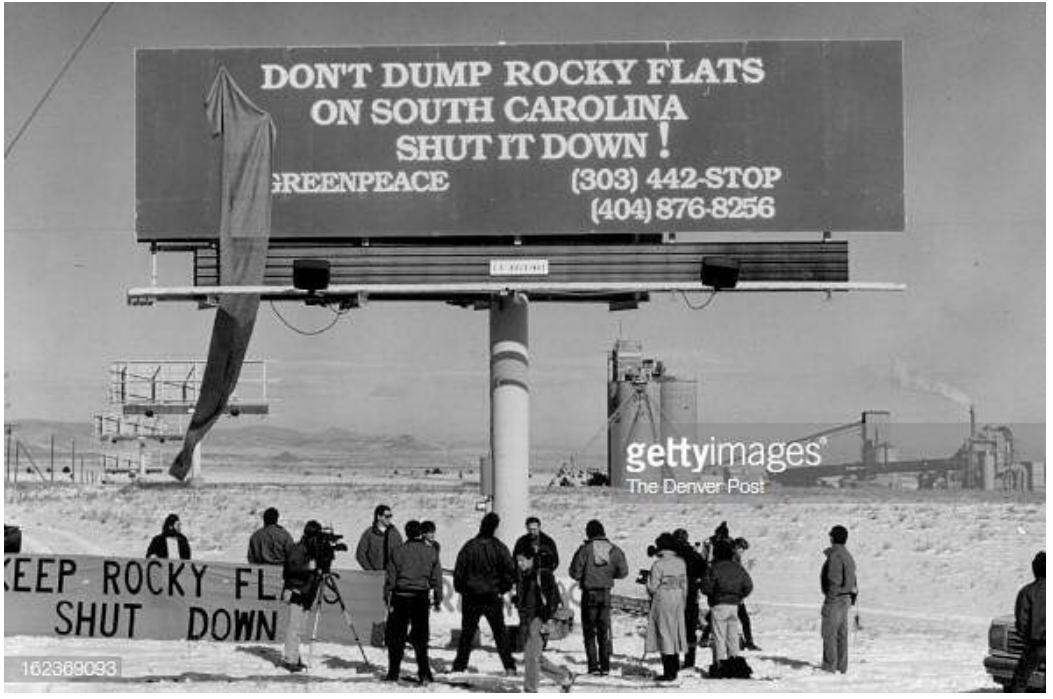
Plutonium pits & tritium in a nuclear warhead. The US has about 5000 nuclear warheads & Russia around 5500 (deployed and reserve). Is such a massive stockpile for fighting a nuclear war or a “deterrent?” Or not….?



Four public interest groups won a federal lawsuit which required NNSA to prepare a “Programmatic Environmental Impact Statement” (PEIS) on impacts of pit production. That document, with public input, is being prepared.



Construction by the AEC of the Rocky Flat pit plant near Boulder, CO started in 1951 and the facility closed in 1989 after an FBI raid and plutonium fires.



DOE in Washington is pushing an **AI data canter at SRS**, initially fueled with natural gas, then speculative Small Modular Reactors. A company called Amentum was selected to develop the concept and is working with AI data company DC BLOX.  DOE has refused to release further details and citizens have not been asked what they think about a data center on public property.

# NNSA Selects Amentum for AI Data Center and Energy Project at Savannah River Site

Proposed public-private partnership would pair a 1-gigawatt data center with on-site energy generation

National Nuclear Security Administration

July 20, 2026

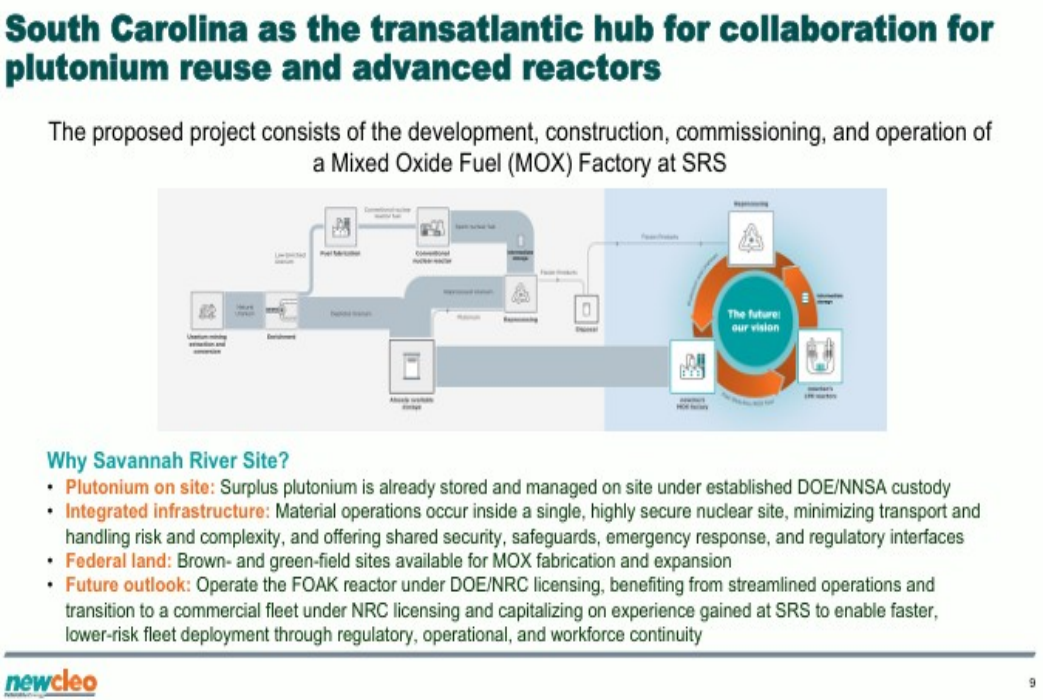
Estimated Read Time 2 min

**WASHINGTON** — The U.S. Department of Energy's National Nuclear Security Administration (DOE/NNSA) today announced the selection of Amentum to enter negotiations for a phased lease to develop an artificial intelligence data center and dedicated on-site energy generation source at the Savannah River Site in South Carolina. The selection follows a competitive request for proposals issued by NNSA for the Savannah River Site Artificial Intelligence Infrastructure and Energy Generation Project.

This project supports the Trump administration's goals of utilizing Federal lands to lower energy costs and help power the global AI race, as outlined in President Trump's Executive Orders on Accelerating Federal Permitting of Data Center Infrastructure, Deploying Advanced Nuclear Reactor Technologies for National Security, and Unleashing American Energy.

The French company *new*cleo has the idea to build a plutonium fuel (MOX) factory at SRS in order to fuel its speculative lead-cooled reactor, likely located initially at SRS – to power the AI data center? - and to sell MOX to other unnamed customers. Some of the MOX could be made from the **19.7 MT of plutonium DOE intends to give away**. More plutonium could be separated via reprocessing from highly radioactive spent fuel now stored at nuclear power sites around the country. South Carolina could become a second HLW site, as SRS is now.



# Questions & Comments?

